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Endodermis and prothallium of *Equisetum*.—KASHYAP³⁴ has investigated the endodermis and prothallium of *Equisetum debile*. He finds that the endodermis is very unstable. At the nodes of the subterranean and aërial sterile shoots, and in the fertile region, the endodermis invests each vascular bundle, while in the internodes of the subterranean and aërial sterile shoots it surrounds the ring of bundles in two layers. These two rings of endodermis occasionally fuse, leaving islands of parenchymatous tissue. In the case of the prothallium, he discovered that if the spores are sown thickly, the prothallia remain small, develop only one growing point, and usually bear only one kind of sex organ. If the spores germinate at a distance from each other, the prothallia become very large and develop a meristem around the margin. It is somewhat remarkable that in this latter case the prothallia produce archegonia first and antheridia later.—J. M. C.

Variation in *Picea excelsa*.—A delayed volume of *Acta Horti Bergiana* contains a remarkable series of illustrations of variations in seedlings, leaves, and especially in the ovulate cones of *Picea excelsa*.³⁵ Most of the plates are double and many of them are beautifully colored, and the number of separate figures averages between 30 and 40 to a plate. The immense amount of variation shown in these figures doubtless would have induced many writers to multiply species. The present account consists of the figures and a good description of plates. There is scarcely a page of text. Even as it is, the illustrations are valuable as a record, and WITTROCK may give a full account later.—CHARLES J. CHAMBERLAIN.

Vegetation of Ohio.—MISS BRAUN³⁶ has studied the vegetation of Ohio as seen in the Cincinnati region, classifying the plant associations according to the physiography into the upland, slope, valley, and floodplain series. All the successions progress toward the mesophytic forest, the climax being either a forest of *Fagus* on the pre-erosion topography, or a mixed mesophytic forest upon the floodplains and in the ravines. She is of the opinion that this erosion climax, which resembles the forest of the southern Appalachians, is the more permanent and will eventually displace the pre-erosion climax beech forest. The report is well illustrated with photographs, maps, and diagrams.—GEO. D. FULLER.

Addisonia.—The fourth number of the second volume of this journal, with its "colored illustrations and popular descriptions of plants," includes the

³⁴ KASHYAP, S. R., Notes on *Equisetum debile* Roxb. Ann. Botany 31:439-445. figs. 3. 1917.

³⁵ WITTROCK, V. B., De *Picea excelsis* (Lam.) Lk., praesertim de formis suecicis hujus arboris. Pars I. Meddelanden om granen. Acti Horti Bergiani 5:1-91. pls. 1-23. 1914.

³⁶ BRAUN, E. LUCY, The physiographic ecology of the Cincinnati region. Ohio Biol. Surv. 2:(Bull. 7) 116-211. figs. 58. 1916.

following species: *Rosa* "Silver Moon" (a garden hybrid), *Dendrobium atroviolaceum* (New Guinea), *Centradenia floribunda* (Mexico and Central America), *Piaropus azureus* (Tropical America), *Solidago altissima* (Eastern United States), *Pentapterygium serpens* (Eastern Himalayan Region), *Freylinia lanceolata* (Southern Africa), *Anneslia Tweediei* (South America), *Crassula quadrifida* (Cape of Good Hope), *Aster cordifolius* (Eastern United States and Canada).—J. M. C.

Redwood distribution.—Investigating the factors limiting the distribution of *Sequoia sempervirens* in California, COOPER³⁷ has made measurements of rainfall at a considerable number of stations in the Santa Cruz Mountains, and has obtained evidence that heavy winter precipitation is necessary for the development of redwood forest. He also shows that this rainfall in itself is effective only when accompanied by abundant summer fog. In making the rainfall studies a type of rain gauge was used that makes possible the summation of precipitation for long periods.—GEO. D. FULLER.

Algae of Devils Lake.—MOORE³⁸ has published a preliminary list of the algae of Devils Lake, North Dakota, the chief point of interest being the alkaline character of the water, which has gradually increased with the diminishing size of the lake. All of the algae in the list were collected during August 1915, and comprise 47 species (29 Myxophyceae and 18 Chlorophyceae). No new genera or species were found, and all of the species were absolutely typical, with no indication of any effect of unusual environment.—J. M. C.

North American Flora.—The third part of volume 21 includes the Allioniaceae (Chenopodiales) by STANDLEY. He defines 182 species in 26 genera, the large genera being *Abronia* (28), *Boerhaavia* (25), and *Allionia* (25). The new species are only 9 in number, but the author's name is associated with 71 additional species and with 5 genera.—J. M. C.

Soil toxins.—By very simple experiments PICKERING³⁹ demonstrates the effect of one plant on another through toxins. The simple technique and striking nature of the results are such as to suggest that similar experiments be introduced into all our laboratories.—GEO. D. FULLER.

³⁷ COOPER, W. S., Redwoods, rainfall and fog. *Plant World* 20:179-189. 1917.

³⁸ MOORE, GEORGE T., Algological notes. II. Preliminary list of algae in Devils Lake, North Dakota. *Ann. Mo. Bot. Gard.* 4:293-303. 1917.

³⁹ PICKERING, SPENCER, The effect of one plant on another. *Ann. Botany* 31:181-187. 1917.